

Antioxidant activities, total phenolics and flavonoids content in two varieties of Malaysia young ginger (*Zingiber officinale* Roscoe.

Abstract

Ginger (*Zingiber officinale* Roscoe) is a well known and widely used herb, especially in Asia, which contains several interesting bioactive constituents and possesses health promoting properties. In this study, the antioxidant activities of methanol extracts from the leaves, stems and rhizomes of two *Zingiber officinale* varieties (Halia Bentong and Halia Bara) were assessed in an effort to compare and validate the medicinal potential of the subterranean part of the young ginger. The antioxidant activity and phenolic contents of the leaves as determined by the 1,1-diphenyl-2-picryl-hydrazyl (DPPH) assay and the total amounts of phenolics and flavonoids were higher than those of the rhizomes and stems. On the other hand, the ferric reducing/antioxidant potential (FRAP) activity of the rhizomes was higher than that of the leaves. At low concentration the values of the leaves' inhibition activity in both varieties were significantly higher than or comparable to those of the young rhizomes. Halia Bara had higher antioxidant activities as well as total contents of phenolic and flavonoid in comparison with Halia Bentong. This study validated the medicinal potential of the leaves and young rhizome of *Zingiber officinale* (Halia Bara) and the positive relationship between total phenolics content and antioxidant activities in *Zingiber officinale*.

Keyword: DPPH; FRAP; Total flavonoids; Total phenolics; *Zingiber officinale*